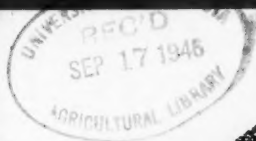


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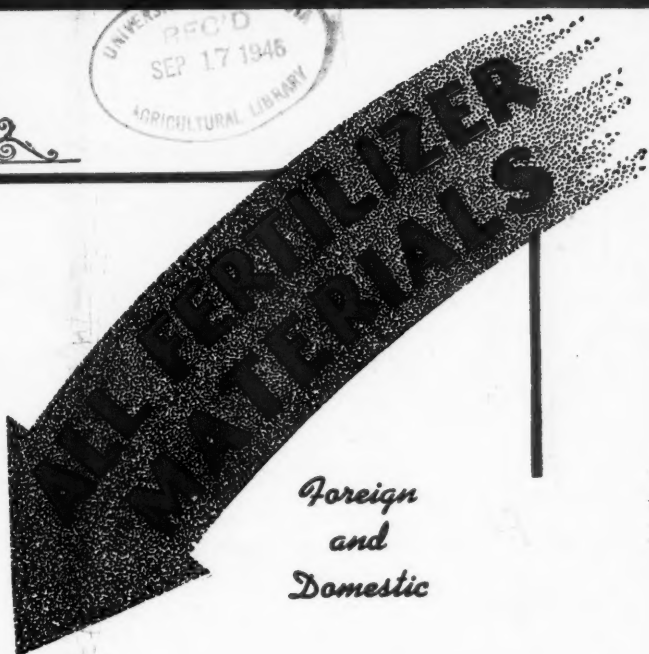


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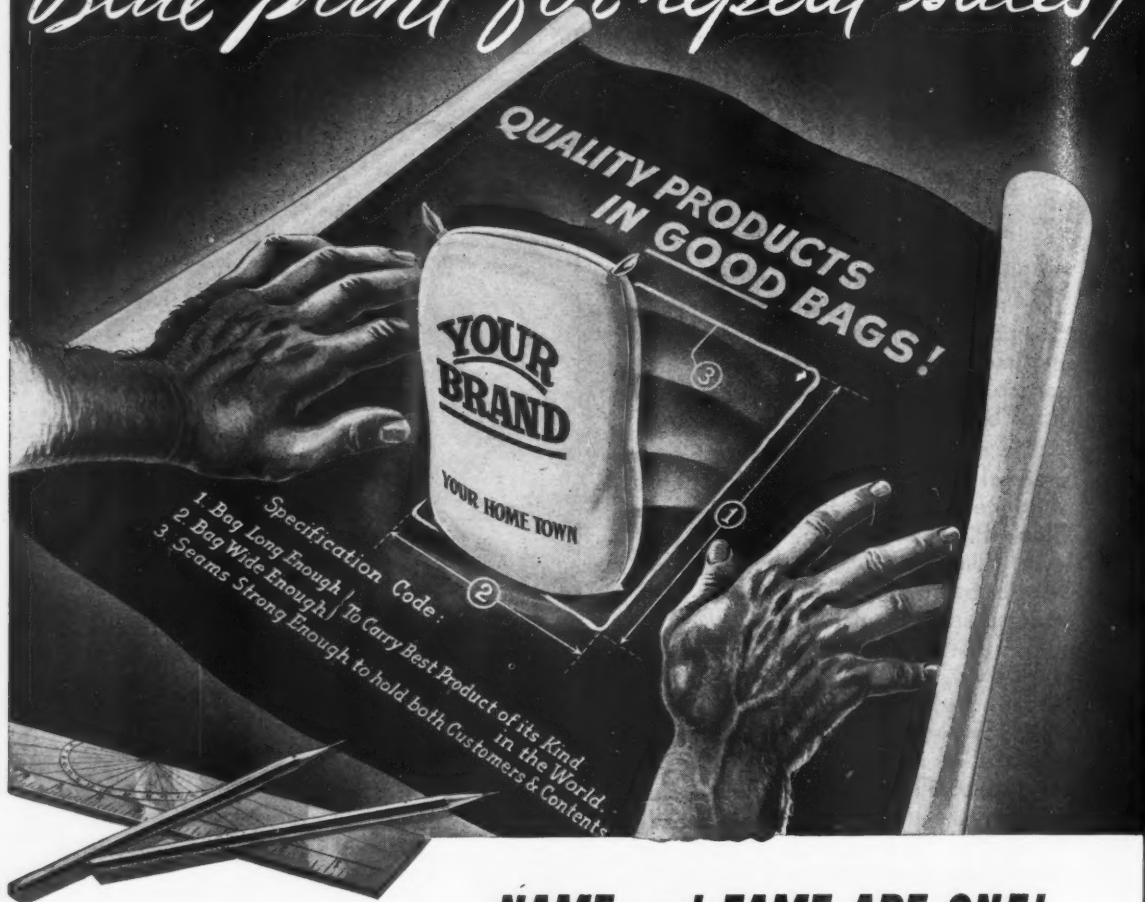
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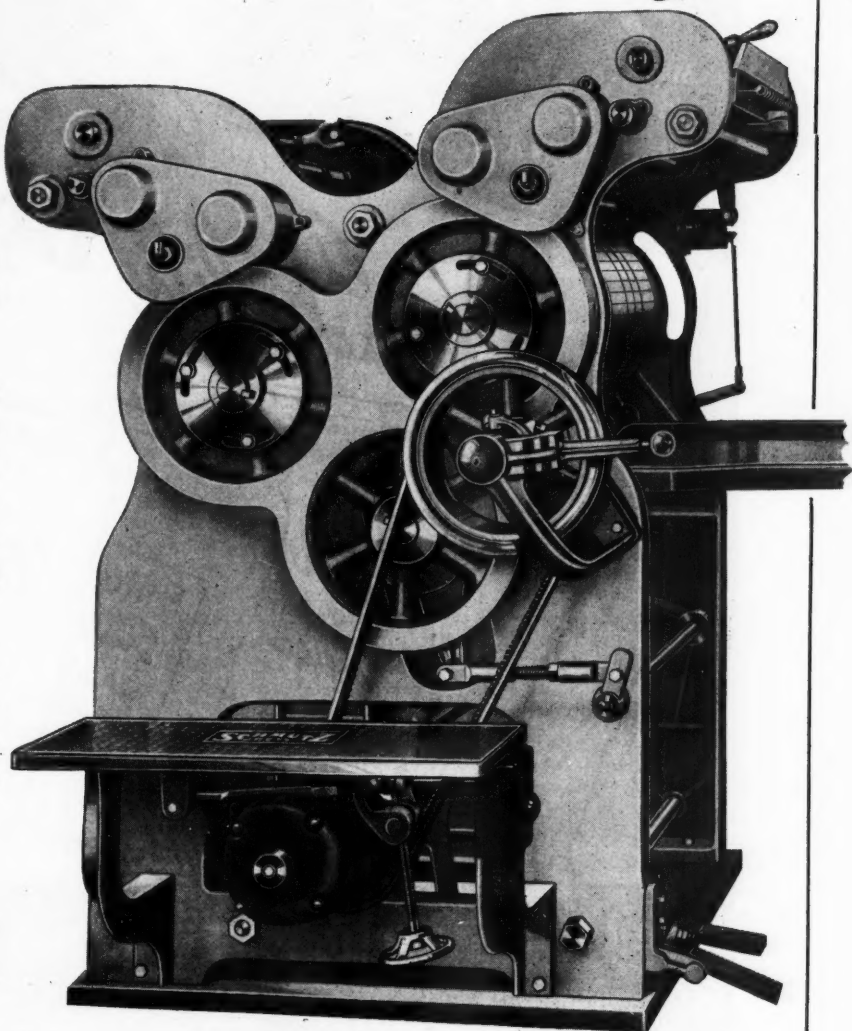
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The American FERTILIZER

Vol. 105

SEPTEMBER 7, 1946

No. 5

What Is the Responsibility of the Fertilizer Industry in the Post-War Period?*

By DR. RICHARD BRADFIELD

*Head, Agronomy Department
Cornell University, Ithaca, N. Y.*

IF THE fertilizer industry fails to assume its full measure of responsibilities in the post-war years, it will not be for lack of post-war plans. Almost every major group interested directly or indirectly in fertilizers has had a committee drafting blueprints for you. The National Planning Association, the National Farm Bureau, the T. V. A., the Land Grant College Association, and the United States Department of Agriculture have all pointed out the way you should go. National legislation is pending which will provide a permanent National Fertilizer Policy Board to furnish constant and permanent guidance for the periods beyond the immediate post-war period. State legislatures are considering what further steps should be taken to guide you in the years ahead. I understand that even the Department of Justice is concerned with your welfare and is laying down rules to keep you from taking dangerous paths. All this attests to the importance of your industry in the national economy.

In spite of all this outside help, your president has invited me, an agronomist, another outsider who never manufactured nor sold a ton of fertilizer in his life, to talk to you about your post-war responsibilities! I am not clear as to his motives in extending the invitation. In my very early youth I seriously

considered becoming a preacher. Ever since, I have found it rather easy and usually have rather enjoyed telling other people what *they* should do. So I promptly accepted the invitation.

There are a few things about the post-war world upon which we shall all agree. It is going to be a much more closely knit world, with more communications, more interdependence than ever before. This closer interdependence will be evident at all levels, international and national. During the war, we exported fertilizer to our allies even when our supply was inadequate to meet our own domestic needs. The war is now over, but we are continuing to share our inadequate supply with our even less fortunate neighbors. I am sure that this group will agree that, where fertilizer can be properly used to produce food, it is better policy, economically and socially, to send these needy countries fertilizers to help them grow more of their own food instead of sending them food, directly.

I have the feeling, without much evidence to back it up, that the American fertilizer industry has a very great opportunity and responsibility in promoting the use of fertilizers, and in developing the fertilizer industry in many countries which are less highly developed industrially than our own. A glance at the maps showing the fertilizer consumption of the world recently compiled by Clark and Sherman of the U. S. D. A. (Misc. Publ. No. 593, April, 1946) shows that a very high

*An address delivered at the annual convention of the American Plant Food Council, Hot Springs, Va., June 24, 1946.

proportion of the arable land of the globe is not receiving any fertilizer. Crop yields are inexcusably low. Close to half the population of the world is living on such a close margin that a crop failure threatens millions with starvation. Larger crop yields by the use of better varieties of crops, better cultural practices, better soil management and better fertilization are necessary in these countries if we are to have a peaceful world. These countries are looking to the United States for technical leadership in the solution of all these problems. The American fertilizer industry should be prepared to do its share of the job.

Interdependence of All Groups in Our National Economy

The recent epidemic of strikes has focused our attention on the extent to which our daily lives can be affected by groups of people who ordinarily seem rather remote to us. The United States has become like a vast organism with each vocational group functioning much like an essential organ. When any one of these numerous organs fails to function properly, the whole country is soon sick. Under such conditions, each group must assume its due share of responsibility for the national welfare. The fertilizer industry is a very vital gland in that important section of our national body which we call agriculture.

As I see it, the chief responsibilities of the fertilizer industry in this country can be stated rather simply. They are:

1. To produce the fertilizers needed by the farmers of the country to produce the crops the country needs.
2. To distribute these fertilizers equitably.
3. To make them available to farmers at a fair price.
4. To assume its due share of responsibility for the efficient use and conservation of our fertilizer resources.

I would now like to discuss each of these responsibilities, as I see them, in a little more detail. It is my firm conviction that if the industry does not assume its due share of each of these responsibilities, it will be subjected to severe and vociferous criticism by the opponents of our free enterprise system who are looking for even the slightest excuse to get the Federal Government deeper into the fertilizer business.

1. Production of Fertilizers

The principal questions relating to the production of fertilizers in the post-war years will likely be: 1. What? 2. How? 3. How much?

You were not greatly concerned with any of these questions during the war, nor yet in the post-war period. Nor are you likely to be bothered by them very much in the next year or two. But they are vital questions which you will have to face sooner or later. I personally feel that there will probably be some rather gradual but important shifts in the exact specifications of the fertilizers needed in different sections of the country within the next decade. I will defer the discussion of this topic until later and take it up under shifts in distribution of fertilizer demands.

How to manufacture the fertilizers needed is a technical question which lies almost solely in your exclusive domain. I shall therefore pass it up with only the passing remark that the techniques will probably not remain exactly the same, that some alert companies with clever research staffs will find better and cheaper ways of making what is needed, while those companies which do not keep their manufacturing plant and techniques up to date will gradually pass out.

This brings me to the \$64 question. How much? How much fertilizer will post-war agriculture require of you? This question is the most difficult of the three because the answer depends upon so many different factors, social, economical, and political, all of which are highly unpredictable at the moment. To clarify the issue, I shall refer to but two guideposts which point in opposite directions. These guideposts are (1) historical trends and (2) the estimates of desirable use of plant food for 1950 compared with 1942-43 prepared by the Bureau of Agricultural Economics of the U. S. D. A. in cooperation with state committees, which include representatives of the experiment stations and the extension service. Most of you are already very familiar with both of these estimates. Many of you had a hand in formulating them. They point to very different levels because they are based on different assumptions and objectives.

A careful study of the relation between fertilizer sales and farm income by Shaw and Mehring, of the U. S. D. A., shows that there always has been a very close correlation between these two factors. We have fairly reliable records of the trends of farm income during and following every war we have ever engaged in. During wars, prices of almost everything tend to go up, frequently to two or three times their normal peacetime value. When the war is over and the shortages accumulated during the war are satisfied, prices tend to fall. In spite of all our effort

to hold the line in this war, most of the evidence I have seen indicates that to date the effects of this last war have been similar to those of the earlier wars. In the last war the farmers' expenditures for fertilizers fell from almost \$450,000,000 in 1918 to about half that, or \$225,000,000, in 1922. Historical precedents indicate then that farmers will buy considerably less fertilizer five years hence than they bought during the war.

In contrast with this, the Bureau of Agricultural Economics estimates that the commercial demand for plant food under conditions of high prices and full employment would be about 20 per cent above 1942-43 consumption. This figure is, I think, a very reasonable one if such favorable economic conditions prevail. They list the "desirable use" by 1950 as about two and a half times that of 1942-43. In other words, the "desirable use" by 1950—four years hence now—is almost exactly double the maximum which they estimate that farmers would buy under conditions of full employment and continued high prices. I have been puzzled ever since they started collecting the data upon which this estimate was based as to the reasons for issuing this very optimistic estimate. Was it similar to the idea of setting an ostrich egg in front of the hen? Should the fertilizer industry be prepared to supply two and a half times as much fertilizer as it supplied in 1942-43?

If the industry is not ready to take the risk of making twice as much fertilizer as farmers could be expected to buy under conditions of high post-war prosperity, should not the government step in and build the plants necessary to supply the fertilizer indicated as desirable? These figures have been used as an argument for such action.

As an agronomist, I am convinced that it is sound to expand gradually our consumption of commercial fertilizers. I do not doubt that we should in due time use the amount of fertilizer indicated in this report as "desirable." I do, however, seriously question the desirability of attempting such a goal by 1950. Time will not permit a detailed analysis of the estimate. So, I shall pick out the one I know least about for a brief comment. I have heard that many of my friends in the South were greatly concerned about the future of the cotton industry. I have heard rumors of full warehouses, the need to reduce cotton acreage, to develop substitute crops, etc. This report calls for an increase of 6 per cent in cotton acreage over 1942-43 and a 79 per cent increase in the amount of fertilizer to be used on cotton. With other crops, increases in plant

food usage considered desirable amount to as much as 748 per cent and average 166 per cent for all crops!

I hope that by this time I have made it perfectly clear just how much fertilizer you should make in the post-war period. I know you expected me to do at least that! If there are any further questions along that line, I shall leave them for the men who follow me on the program. Mr. Minor, is, I believe, chairman of the Department of Agriculture's Committee on Fertilizers and Congressman Pace, I hope, will be able to tell us whether or not matters are under sufficient control at Washington to assure us that we need have no fear of a post-war slump!

Having thus disposed of your responsibility for producing either (1) the amount of fertilizers farmers will buy in the post-war years or (2) the amount of fertilizer which they ought to use by 1950, I would like to discuss now briefly and informally your other responsibilities.

2. To Distribute These Fertilizers Equitably

During the war period the Federal Government has relieved the industry from the responsibility of distributing the fertilizer materials available in the country. This was due to the fact that the supplies were inadequate to meet the unprecedented demand and to the outgrowth of a desire to distribute the fertilizer available as equitably as possible. I think, as a whole, a fair job was done. I was interested to note a few weeks ago that when the supply of certain fertilizer materials appeared likely to become far short of meeting the demand for next year, the industry was disposed to allow the government to assume the headaches of allocation under these circumstances. But I think we all hope that government allocations can be dispensed with relatively soon and then the responsibility will be back in the hands of the industry. If it is to remain in the hands of the industry, it will of course be necessary to make a fair distribution of the materials available. If sufficient fertilizer is not made available in certain sections and at a fair price, there is bound to be a great clamor for governmental interference again and possibly the erection of government plants to meet the demand which the industry has failed to meet satisfactorily.

I am inclined to think there will be a rather noticeable shift in the distribution of fertilizer tonnage in the post-war period. In the older fertilizer consuming areas, the demand has become fairly stable, and there are certain

(Continued on page 24)

The American Chemical Society

Abstracts of Some of the Papers to be Presented at the Meeting of the Division of Fertilizer Chemistry at Chicago, Ill., September 9-11, 1946

Properties of Monocrystalline Ammonium Nitrate Fertilizer

Philip Miller and W. C. Saeman, Tennessee Valley Authority, Wilson Dam, Ala.

Monocrystalline ammonium nitrate of improved physical properties for fertilizer, produced on a pilot-plant scale in a continuous vacuum crystallizer, was tested for resistance of the crystals to shattering under impact and behavior of the conditioned material during prolonged bag storage and in fertilizer distributors. These tests indicated that it was equal or superior in these respects to commercially available forms of ammonium nitrate fertilizer. The adverse effect of low porosity and nonspherical shape on fertilizer properties previously reported for monocrystalline ammonium nitrate was not encountered with the present improved product. In addition to the favorable economics and product quality of continuous vacuum crystallization, it is the least hazardous process available for commercial use.

Spontaneous Development of Heat in Mixed Fertilizers

John O. Hardesty and R. O. E. Davis, Division of Soils, Fertilizers, and Irrigation, Bureau of Plant Industry, Soils, and Agricultural Engineering, Beltsville, Md.

Excessive development of heat in curing piles of fertilizer containing superphosphate, organic matter, and large amounts of inorganic nitrate is the result of oxidation of organic matter by nitric acid which is formed in the reaction between the nitrate and free phosphoric acid. The rate of the reaction is accelerated by increases in (1) concentration of free phosphoric acid in the liquid phase of the fertilizer, (2) size and insulating properties of the curing pile, (3) amount and mobility of the liquid phase in the mixture, and (4) the degree of intimacy among the active ingredients of the mixture.

Under certain conditions the heat generated by the oxidation reaction is sufficient to cause spontaneous combustion in a 5-14-0 base mixture stored at 30° C. (86° F.). At temperatures below 90° C. the reaction is similar for all inorganic nitrates ordinarily used in fertilizers. [Above 90° C. the rate of the reaction involving ammonium nitrate is many

times more rapid than that involving either sodium or potassium nitrates.

Neutralization of the free acid in such mixtures prevents these reactions from occurring at ordinary temperatures, but the resulting heat of neutralization and of other curing reactions should not be allowed to accumulate in the pile. Otherwise, this heat of curing confined in the curing pile may be sufficient to cause the hydrolysis of monocalcium phosphate, the production of additional free phosphoric acid, and consequently the reestablishment of the oxidation reactions.

Mining and Processing Langbeinite at Mine of International Minerals & Chemical Corp., Carlsbad

G. T. Harley

The only deposits of langbeinite known to exist in the United States are being mined by International Minerals and Chemical Corp. at Carlsbad, N. Mex. The mining of these ores was started in October 1940 and production has steadily increased from 28,672 tons in the 1941-42 fiscal year to 85,701 tons in the 1945-46 fiscal year just closed. Production of washed langbeinite, or "Sul-Po-Mag," is expected to reach 100,000 tons in the 1946-47 period.

The geology of the region is complex and is not fully revealed. A thick series of evaporites was laid down in the deeper part of an old Permian sea which had been almost surrounded by a limestone reef. Beds of langbeinite occur at two horizons in this series and through small rivulets. In places sylvite is mixed with langbeinite or may surround or overlie bodies of langbeinite ore. Intensive study of the deposits is under way but the ultimate answers as to genesis will be obtained by geological studies which have as yet made little progress.

Mining is by room-and-pillar method and operations are carried on with the latest in mechanical equipment. There are no tracks on the level and hauling is by means of rubber-tired shuttle cars operated from a double overhead trolley system and cable reels. The ore is undercut, and drilled with electric augers, similar to coal mining practice. The

level is equipped with modern electrical and mechanical shops which permit almost a complete repair and maintenance schedule without removal of equipment to the surface.

The preparation of the finished langbeinite, or "Sul-Po-Mag," is by simple crushing and washing in fresh water to dissolve the halite and wash out the clay impurities. The solid langbeinite is then centrifuged and dried and placed in a storage warehouse, ready for market. By hydrating langbeinite and combining it with sylvite in a so-called "base-exchange" process, magnesium is eliminated with the substitution of potassium to make sulphate of potash, containing 90 to 95 per cent potassium sulphate.

Recent Developments Concerning the Use of Plant Growth Regulators

John W. Mitchell, Bureau of Plant Industry, Soils, and Agricultural Engineering

Growth-regulating substances can be used in various ways to bring about different types of responses by plants. Some of these plant responses have already proved to be of practical value and growth-regulating chemicals are now being used to advantage in the vegetative propagation of plants, in the production of certain orchard crops such as apples and pears, in the production of tomato fruit under greenhouse conditions, and in the killing of many kinds of weeds. Improvements are continually being made in our present methods of using growth-regulating chemicals, such as simplifying the method of treating cuttings and of treating tomato flowers in producing seedless tomato fruit. The aeroplane has been adapted to use in treating orchards with growth-regulating chemicals so as to reduce the amount of labor involved in preventing preharvest fruit drop.

Intensive research concerning the use of growth-regulating substances as differential herbicides is leading to a more thorough understanding of how these chemicals can be used most effectively for this purpose. Studies regarding the movement of the 2, 4-dichlorophenoxyacetic acid stimulus in plants indicate that its translocation is associated with translocation of carbohydrates, when the acid is applied to the leaves of the plant. When the chemical is applied to the roots of the plant the stimulus apparently moves independently of the transport of carbohydrates. Recent studies have shown that 2, 4-dichlorophenoxyacetic acid is inactivated when mixed with moist soil but that it may have a persistent detrimental effect on soils that

are kept under dry conditions. 2, 4-Dichlorophenoxyacetic acid has been found to be relatively nontoxic to farm animals.

By varying the kind of growth-regulating chemicals used, the amount of the chemical used, and the method of application, scientists have been able to produce numerous additional responses by plants, some of which show considerable promise of possible practical application. These new responses include the hastening of the ripening of detached fruits such as bananas, apples, and pears; stimulating the fruit growth of certain varieties of blackberry; controlling the flowering date of some varieties of pineapple; checking the growth of vegetative buds in stored plant material; and reducing the amount of scald on stored apples.

Fertilizer Supplies for the 1946-47 Crop Planting Year

F. S. Lodge, The National Fertilizer Association, Washington, D. C.

The U. S. Department of Agriculture, acting in the role of a claimant agency for the American farmer, has set up figures as to the plant food needs of the country for the fiscal year 1946-47 amounting to 800,000 tons of nitrogen (N), 1,850,000 tons of phosphoric acid (P_2O_5), and 800,000 tons of potash (K_2O). Consumption of these plant foods in 1945 amounted to about 680,000 tons of nitrogen, 1,435,000 tons of phosphoric acid, and 706,000 tons of potash.

Supplies of materials available for use in 1946-1947 would no doubt be adequate to meet all domestic requirements except for the necessity for exports to meet government commitments to UNRRA, famine relief, and use in occupied territories. Such exports will no doubt draw heavily on our supplies, particularly nitrogen, under the "borrow and return" plan announced by the Government. This plan contemplates shipping considerable quantities of commercial nitrogen abroad for relief during the fall months, like amounts being later made available from supplies produced in the ordnance nitrogen plants recently reopened. Whether such "return" shipments will be possible in time to meet our own needs is a matter of concern to the fertilizer industry. Fertilizer must generally be in the farmers' hands at or before planting time. Manufacturing processes require a curing period, so that a time interval is involved between receipt of raw materials and use of finished fertilizers. Present information indicates about as much plant food will be available for next year as was consumed in the past record-breaking year.

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Woodrum Addresses Insecticide Association

Clifton A. Woodrum of Washington, D. C., president of the American Plant Food Council, told the 13th annual meeting of the Agricultural Insecticide and Fungicide Association, held at Spring Lake, N. J., on September 4th, that "we can have no economic solidarity, no domestic tranquility and no personal security unless we maintain and foster individual initiative and a system of free enterprise in America."

Mr. Woodrum, a member of Congress for 23 years before resigning January 1 to head the Council, pointed out that "the fertilizer industry and the makers of insecticides and fungicides have many things in common, but we recognize in particular that there can be no economic stability in this democratic nation unless there is a self-sustaining and prosperous agriculture."

"I have great faith and confidence in the Nation's private enterprise system," he added. "We stand on common ground with the farmer who wants only a fair, square chance in a free competitive economy to live his life and conduct his business under circumstances from which he may reasonably expect to have a profit from his labors."

"The time is here when we must rededicate ourselves to the duty of preserving a free economy where the individual will have the right and the opportunity to live his own life, to make his own mistakes and to achieve his own success," he said, emphasizing that "we must be ever mindful of our responsibilities in assisting farmers to continue a program of full production to provide for the less fortunate in the devastated countries and at the same time provide abundance at home."

Mr. Woodrum announced that the fertilizer industry "is expanding its facilities just as rapidly as materials are available and restrictions are removed," pointing out that "surveys already indicate that 30 or more fertilizer plants were either started during the war or projected for construction by private industry."

"We take some pride in announcing that American fertilizer manufacturers again expect to have a record breaking production for the coming season, which means farmers will have a little more fertilizer than in the 1945-46 period," he added. "A new production record is expected despite shortages of machinery, building materials, labor, difficulties in transportation and inability to obtain adequate phosphate rock."

"Notwithstanding the fact that supplies of nitrogen, phosphoric acid and potash used in the manufacture of fertilizer will be more than double the 1930-40 average annual consumption, the world demands still will be greater than supplies.

"The war-time fertilizer production record has been described by the assistant to the Secretary of Agriculture as 'phenomenal' and worthy of 'the sincere compliments and regard of the Nation,' but we in the industry are not content to rest on our past achievements. We will continue to recognize our responsibility to the farmers and to the Nation and we will continue our efforts to obtain the needed machinery, repair parts, materials and other essentials which are required to meet the plant food needs of the present and the future."

American Potash Adds to Board

The American Potash & Chemical Corporation has increased its board of directors from nine to twelve members. New directors are B. R. Armour, president of the Heyden Chemical Corporation, New York; V. A. Johnston, vice-president of A. G. Pecker & Co., and a director of Heyden; and H. G. Walter, Jr., of the law firm of Fulton, Walter & Halley, New York.

Obituary

Victor A. Moore

Victor A. Moore, president of the Moore Fertilizer Co., Seaford, Delaware, died at his home on September 4th after two years' illness. He was 63 years old.

Mr. Moore had served as president of the company since its establishment in 1934. He also operated a large cannery in Seaford and for many years was a director of the First National Bank of that community.

He was active in Delaware politics and served several terms as State Senator for his district. He was also president of the State Board of Supplies and a member of the State Board of Agriculture.

He is survived by his wife, a son, V. Edward Moore, and a daughter, Mrs. Anna Jane Rogers.

Potash Allocations Announced

The Civilian Production Administration issued potash allocation to established fertilizer manufacturers on August 22, 1946. In announcing the allocations for agricultural use from June 1, 1946 through March 1947, officials in the Chemicals Division of the Civilian Production Administration said that, "Despite a small rise in domestic production of potash, the supply will meet only 60 per cent of the total quantity requested by all commercial fertilizer companies in the United States and possessions.

"In general, established fertilizer firms will get the same amount of potash allocated to them during the corresponding period last year. Domestic production of potash (K_2O) during the period June 1, 1946 through March 1947 is estimated at 792,706 tons as compared with 780,184 tons for the corresponding period in 1945-46. This small increase together with a small tonnage available because of reduced exports and a decrease in the quantity required for indirect military purposes will be absorbed in meeting the requirements of new fertilizer mixing plants.

"The general distribution of agricultural potash has been designed to make it possible for fertilizer manufacturers to meet the essential requirements of each crop producing area, including sections where there has been a substantial increase in the use of fertilizers. It follows recommendations of the Department of Agriculture.

"Allocations were made under Schedule 120, Order M-300. This regulation permitted established manufacturers to receive shipments sufficient to meet requirements from the beginning of the allocation period until allocations were made by Civilian Production Administration's Chemical Division."

Allocations to new fertilizer companies are being worked out and it is expected that these will be announced in a few weeks.

No Allocation of Nitrogen Materials

Industry requests that both sulphate of ammonia and ammonium nitrate be placed under allocation because of the supply shortage having been turned down by the Civilian Production Administration it is learned.

The requests were made at recent meetings between the industry and the CPA, when it became apparent that supplies this year probably will fall far behind requirements. It is understood that top officials of CPA have

decided against an allocation program because it is too late for such a program to be operated efficiently and effectively.

Oregon Plant to Make Sulphate of Ammonia

A generous supply of nitrogen fertilizer is now assured for Pacific northwest farmers for the first time since the war started, reports Art King, extension soils specialist at Oregon State College. King has represented the extension service in negotiations with the government to manufacture sulphate of ammonia at the Columbia Metals Alumina plant at Salem, Oregon.

This defense plant, built by the RFC, has been authorized to continue and expand production of fertilizer throughout the remainder of 1946, King has been notified. Experimental alumina operations are expected to end about July 15th, after which the entire plant will be available for fertilizer production.

Plant alterations to permit continuous production of 200 tons per day are planned by Harry Morgan, RFC engineer. Raw materials, anhydrous ammonia and sulphuric acid, are being ordered from various Pacific coast and midwest points.

Present authorized production totaling more than 30,000 tons is much more than the three northwest states can use, King points out, but it is expected that the major part of the output will go to UNRRA for foreign relief purposes.

Northwest growers and fertilizer dealers will have ample supplies available from immediate production, however, if they take advantage at once of the current supply. The output of the plant can probably be kept for local use as long as the material is taken directly from the plant, which has no storage facilities. When there is a lag in local demand

other arrangements for disposal will have to be made.

King believes growers will be wise to purchase not only their entire needs for fall use but at least part of their 1947 requirements as well. Because dealers' warehouses will be largely filled with this year's seed crops, growers will have to cooperate by providing their own storage facilities.

International Supports Extensive Research Program

Since launching its extended research program five years ago, Louis Ware, president of International Minerals & Chemical Corporation, reported that the company to date has supported 37 different experimental projects in 19 universities and agricultural experiment stations at a cost of over \$112,000. The projects are designed to determine better means of food production, more efficient soil utilization, more beneficial treatment of soils to increase food crops, and the development of better mineral constituents for animal nutrition.

Institutions where support has been given or where aid is currently being received include the University of California, University of Chicago, Cornell University, Georgia Experiment Station, Florida Experiment Station, Indiana Agricultural Experiment Station, University of Illinois, Kentucky Experiment Station, Massachusetts Agricultural Experiment Station, Michigan State College, Mississippi State College, University of Missouri, Northwestern University, New Jersey Experiment Station, New York Experiment Station, North Carolina Experiment Station, Ohio Experiment Station, University of Wisconsin, and Ontario Agricultural College.

The research projects are supervised by Dr. Paul D. V. Manning, the company's vice-president in charge of research.

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FERTILIZER MATERIALS MARKET

NEW YORK

Potash Allocations Issued for Former Fertilizer Purchasers. Demand for All Materials at Record Levels. Feed Market Taking Almost All Organics. Superphosphate and Phosphate Rock Production Still Below Demand.

Exclusive Correspondence to "The American Fertilizer"

NEW YORK, September 3, 1946.

The only important development during this reporting period is the fact that the Civilian Production Administration issued potash allocations to established fertilizer manufacturers on August 22nd. These allocations are to cover the period June 1, 1946, through March, 1947. Allocations for new fertilizer mixing plants are expected in the near future.

Consumer demand for mixed fertilizers has shown a normal seasonal decline, but inquiry from mixers remains at record-high levels. Most producers of basic materials are in a sold-up position through the first of next year. Considerable concern is felt throughout the trade about transportation facilities during the fall and winter months as it seems probable there will be an increasing shortage of boxcars.

Export inquiry for inorganic fertilizers is active, and for the eleven months of the fiscal year, July through May, exports totalled 1,215,000 tons. This was an increase of approximately 75 per cent over the same period a year ago. In spite of the relaxing of certain controls on imports, offerings from abroad remain light, and the continued high-price ideas of foreign sellers makes trading impossible at the present time.

Sulphate of Ammonia

Sales are being made on a month-to-month basis, and demand remains far from being fulfilled. The supply situation will undoubtedly continue to be tight throughout the coming fertilizer year.

Nitrate of Soda

A seasonal decline in inquiry is reported, but stocks of both domestic and foreign material have not been built up appreciably to date.

Organic Materials

At this writing there is considerable confusion as to OPA controls. As of August

15th, import controls were revoked on dried blood, bones, fish scrap, fish meal, liver meal and tankage, but these materials continue to go directly to the feed trade.

Superphosphate

Production continues higher than this time last year and sales made on a month-to-month basis are keeping inventories at a low level. Almost all producers are completely sold and the forward outlook is extremely tight.

Phosphate Rock

No new developments in this market, with additional buying interest very heavy. The hoped-for increase in production capacity has not been realized as yet.

Potash

As a result of the recent issuance of allocations, fertilizer manufacturers are currently placing orders with producers. Contracts cannot be issued until CPA has approved delivery schedules submitted by the producers. Allocations are expected momentarily for the new fertilizer plants.

CHARLESTON

Organics Prices Out of Fertilizer Range. Fish Catch Improved Somewhat. Inorganic Supply Well Below Requirements

Exclusive Correspondence to "The American Fertilizer"

Charleston, September 3, 1946.

Organics.—Trading in domestic packing-house organics is small as it is expected prices will revert to former OPA levels of \$5.53 per unit ammonia (\$6.72 per unit N) plus \$7.50 per ton on blood and fertilizer tankages. Blood and tankages during the OPA holiday were reported sold at almost double the old ceilings, principally to the feed market. With controls on importation now revoked on blood, bones and bone materials, fish scrap

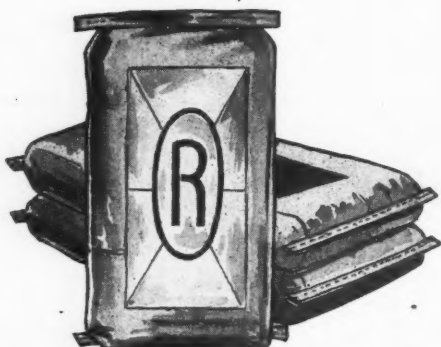
The best efforts fail with poor packing conditions



Poor Packing Conditions are often the result of using an improper container for the packing job

Packed in Raymond Multi-Wall Paper Shipping Sacks, powdered, crushed, or granulated materials are easy to handle and withstand all shipping hazards. They are the favorite shipping sacks of the leading packers, producers, and shippers of fertilizer. Manufactured in various strengths, types, and sizes, printed or plain, they are the perfect shipping sacks for fertilizer products.

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RAYMOND

Multi-Wall

PAPER SHIPPING SACKS

and meal (except scales), grease cakes, liver meal and tankage, the importation of these organics will be facilitated for those who are willing to pay the prices demanded, particularly by the South American market. The South American market is still higher than most domestic buyers' views. European organics still remain practically unobtainable. Nitrogenous from domestic producers still is far below demand and at curtailed production.

Bone Meal.—Very few domestic offerings can be obtained and South American ideas of price remain higher than buyers are willing to pay.

Blood.—During the week of August 26th a small quantity was quoted for immediate shipment at around \$9.55 per unit of ammonia (\$11.61 per unit N) Chicago. South American remains too high for most buyers' ideas.

Fish Scrap.—Production is far below demand though the catch of fish has improved slightly due to better weather conditions recently. Bulk of the fish catch is still going to the feed market in the form of fish meal.

Nitrate of Soda.—As seasonal requirements are eased, demand has fallen off accordingly but the prospect for a large demand in future is strong. Supply is expected to trail demand, however.

Sulphate of Ammonia.—Demand is very strong as buyers do all they can to cover for the coming season. Many buyers, particularly in the Southeast, are having considerable difficulty in securing sufficient coverage of their needs. Present supply remains far below demand.

Superphosphate.—Demand remains exceedingly strong and sellers of bulk superphosphate are unable to supply the unprecedented call for this material. Shortage of sulphuric acid and phosphate rock hampers production, which nevertheless is about 12

per cent above the previous fiscal year ending June, 1945.

Phosphate Rock.—Supply remains insufficient to meet the demand both from domestic and foreign buyers. Domestic shipments are active and if rock were available for shipment against export inquiries, considerable business could easily be done. Producers are striving to meet domestic demand first, however.

PHILADELPHIA

Mixers Anxious about Supplies for Next Season's Production. No Improvement in Principal Materials. Potash Allocations Issued.

Exclusive Correspondence to "The American Fertilizer"

Philadelphia, September 3, 1946.

While the demand for mixed fertilizers has subsided to a more normal basis, there is very active inquiry for raw materials, and supplies are exceedingly short. The shortage of box cars and slow movement of shipments adds further to the general uneasiness of the mixer.

Sulphate of Ammonia.—Although the production is gradually increasing, many buyers are not receiving their full requirements, and it is feared there will not be enough to go around. The Civil Production Administration has refused to place this article under allocation, however.

Nitrate of Soda.—Demand has relaxed to normal for this season, but there is not much improvement in the supply situation.

Castor Pomace.—No business to report.

Blood, Tankage, Bone.—There is an abundance of inquiry from mixers but they just cannot buy in competition with the feeding trade. While these materials are back under ceiling as at June 30th, it is confidently expected that there will soon be new and higher ceilings. Bone is very strongly in demand, with no visible supply of consequence.

Manufacturers' Sales Agents for **DOMESTIC**

Sulphate of Ammonia

Ammonia Liquor

::

Anhydrous Ammonia

HYDROCARBON PRODUCTS CO., INC.

500 Fifth Avenue, New York

Fish Scrap.—There is some movement on contracts, but the factories claim inability to make additional offerings. In any event, the feeding trade takes practically all this material. It is significant that fishing was real good during the short period of extra high prices, but operations have been restricted upon the return to controlled prices.

Phosphate Rock.—Production is heavily sold ahead and continued scarcity of supply is expected. The demand does not subside and is far ahead of the ability to supply.

Superphosphate.—Stocks of this article are said to be the lowest in several years, although the production is slightly ahead of last year. The demand is heavy with shipments a little slow.

Potash.—Allocations for agricultural use from June 1, 1946, through March, 1947, have been made, but the chemicals division of CPA seems to think the actual supply will be about 60 per cent of the quantity asked for by fertilizer manufacturers. It is admitted there will be an increase in production and this will be used to meet the requirements of new mixing plants. It is felt the general distribution plan makes it possible for mixers to meet the essential requirements of each crop producing area. It follows recommendations of the Department of Agriculture.

CHICAGO

Lack of Raw Materials Cuts Supply of Fertilizer Organics to Low Levels. Ceiling Uncertainty Hampers Feed Market

Exclusive Correspondence to "The American Fertilizer"

Chicago, September 3, 1946

It's the old story in organics—good demand and light supply. Raw materials remain under restriction of Order M-390, which prevents full use of chrome stock so essential in producing nitrogenous. Restricted tannery operations due to lack of hides and black markets will further reduce the output. Under these circumstances it is expected nitrogenous organics will be allocated at approximately 30 per cent of the tonnage supplied during the base period of 1944-45.

Feed prices have been in a mixed condition, owing to the uncertainty of ceilings. Steamed bone meal for feed is reported selling at \$65.00 per ton, f.o.b. producing point.

CASE HISTORY No. 8

One in a series of factual experiences of a group of American manufacturers with Multi-wall Paper Bags.

COST COMPARISON

(Per Ton)

	Burlap Bags	Paper Bags
Container cost . . .	\$3.25	\$2.80
Labor cost71 1/2	.18 1/2
Total bag and labor cost	\$3.96 1/2	\$2.98 1/2
Saving, paper over fabric.		\$0.98

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ST. REGIS BAG PACKAGING SYSTEMS are made in a variety of capacities, speeds, and manpower requirements to suit specific products and plant layouts. Machines are available in types to meet the special characteristics of a wide range of products, with filling speeds as high as twenty-four 100-lb. bags per minute — with one operator.

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SOME "EARTHY" FACTS

...about Packaging Economy

Whether you are packaging chemicals, foods, fertilizer or rock products, a St. Regis Packaging System individually designed to suit your product will effect worth-while economies. This eighth in a series of Multiwall success stories relates the experiences of the Floridin Company, Warren, Pa., processors of fuller's earth under the trade names of Floridin and Florex.

In 1945 this company installed a St. Regis 301-FB packer and began using 50-lb. Multiwall paper valve bags instead of 125-lb. burlap bags. Not only was there a saving of 45¢ per ton in container cost after switching to Multiwalls but there was also an appreciable reduction in labor costs.

Under the old system eleven men were required to package 100 tons per day in 125-lb. burlap bags. With the St. Regis Packaging System, labor costs dropped from

Fuller's Earth a "Natural" for St. Regis Packaging System: —

.... Container Costs Cut. . . 14%

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.... Production Potential
"Upped" 180%

71½¢ per ton to 18½¢ . . . a saving of 75%. Company officials estimate that with a battery of four St. Regis packers and a crew of only eight men they will be able to increase production to 280 tons per day . . . an increase of 180%.

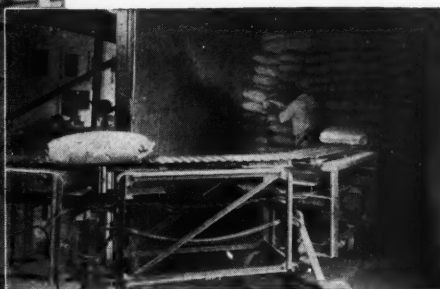
For the full picture story on how the Floridin Company reduced container costs, increased production potential, and cut labor costs by the installation of a St. Regis Packaging System and streamlined mechanized handling equipment, mail the coupon. You will find the same basic principles applicable to *your* business.



The filled Multiwalls are dropped on a conveyor belt which carries them to a freight car.



One man operates this St. Regis packer, which simultaneously fills and weighs 50-lb. Multiwall valve bags.



This flexible, portable conveyor delivers filled Multiwalls to the box car. Note flat, compact manner in which Multiwall valve bags stack.



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Mail this coupon for the complete story

Without obligation, please send me full details regarding "Case History" No. 8, outlined above.

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Ardin Appointed CPA Fertilizer Head

Frederick P. Ardin of New York, who has been consultant to the Inorganics Branch of the Chemicals Division of the Civilian Production Administration, has been named chief of the branch, filling the vacancy caused by the recent death of J. William Wizeman.

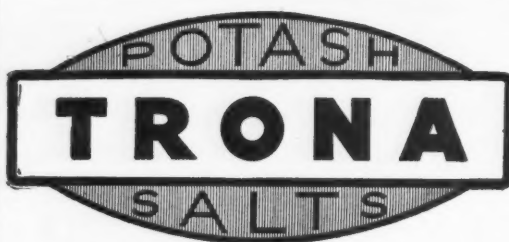
Mr. Ardin had been engaged in chemical development and research work from 1921 until 1942 when he joined the Chemicals Division of the old War Production Board, being associated first with the statistical section under Felix Stapleton and later in the year transferred to the inorganics branch under Mr. Wizeman to handle alkalies. He left WPB in June, 1945, to become associated with Joliet Industrials, Inc., engaged in silica gel production. He returned to Washington a few months ago and became consultant to the inorganics branch of which he is now made chief.

July Sulphate of Ammonia

The production of by-product sulphate of ammonia increased 19 per cent over June, according to the U. S. Bureau of Mines, and

is now running more than 2000 tons per day. So far this year, however, production is 270,000 tons behind the same period of 1945. In spite of increased production, shipments dropped 5 per cent below June, and the stocks on hand at the end of the month advanced to 46,779 tons, an increase of 86 per cent over June 30th. The shortage of box cars contributed to this. The new ceiling of \$30.00 per ton, f.o.b. plant, is expected to provide better distribution in the future and to encourage increased output, according to the Bureau of Mines.

Production	Sulphate of Ammonia Tons	Ammonia Liquor Tons NH ₃
July, 1946.....	64,842	2,158
June, 1946.....	54,633	1,869
July, 1945.....	67,423	2,327
Jan.-July, 1945.....	331,342	13,549
Jan.-July, 1945.....	465,555	16,558
Sales		
July, 1946.....	43,034	1,807
June, 1946.....	45,303	1,624
July, 1945.....	64,878	2,039
Jan.-July, 1946.....	316,301	12,651
Jan.-July, 1945.....	507,295	15,578
Stocks on Hand		
July 31, 1946.....	46,779	823
June 30, 1946.....	25,170	627
July 31, 1945.....	27,043	822



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Manufacturers of Three Elephant Borax and Boric Acid

See page 30

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CHEMICO PLANTS are PROFITABLE INVESTMENTS

Each of our messages to you in this publication emphasizes that "CHEMICO PLANTS are PROFITABLE INVESTMENTS."

Why is this statement true?

Because, firstly, every CHEMICO fertilizer or acid plant is specifically planned to meet individual needs.

Because, second, CHEMICO recommendations are based on 30 years of specialization in these fields and backed by the results obtained in installations all over the world, serving a wide range of requirements.

Because, third, CHEMICO resources include every facility to make thorough investigations, and to develop new processes when necessary; and the broad CHEMICO patents and available designs provide a selection that assures best results for each project.

And, finally, because each CHEMICO plant is covered by an overall guarantee of performance.



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CHEMICO PLANTS are PROFITABLE INVESTMENTS

Southern States Phosphate Rebuilding Plant

The rebuilding of the plant of the Southern States Phosphate and Fertilizer Co. in Savannah, which was destroyed by fire, is now well under way. The same general "A" type of construction is being used, with certain improvements that will give more floor space and increased production. A new completely integrated conveyor system will give efficient overhead distribution throughout the entire plant area. An automatic hopper, conveyor and scale system for formulating is also being installed.

Process Tankage Fertilizer Production Declines

Figures on the production of process tankage fertilizer for the four years ended April 30th, prepared by the U. S. Department of Agriculture's Research Administration, show that the output has decreased because of the falling off in supply of the raw materials which are by-products of various industries.

A great part of process tankage is made by treating such wastes as leather scrap, feathers, spent glue stock, and felt trimmings under steam pressure with or without sulphuric acid.

The final product contains on the average about 8.5 per cent nitrogen, mostly insoluble in water, but when placed in the soil becomes slowly available to crops. Were it not for this useful outlet, the disposal of many of the waste products would be a problem.

The Department's computations, compiled by A. L. Mehring of the Bureau of Plant Industry, Soils, and Agricultural Engineering, show the following production in short tons for four May-to-April years: 1943, 104,614; 1933, 101,300; 1945, 90,638; 1946, 87,695.

Although production had decreased somewhat, there has been sufficient demand for process tankage so that much more could have been sold during the past four years had it been available, Mr. Mehring says. The total output for 1945 and 1946 came from eight plants operated by the following companies at the locations shown:

American Agricultural Chemical Co., Carterot, N. J.; Consolidated Chemical Industries, Woburn, Mass.; Endicott-Johnson Corporation, Endicott, N. Y.; National Utilization Works, Norfolk, Va.; Smith-Rowland Co., Chemical, Ill., and Norfolk, Va.; United Fertilizer Co., Carrollville, Wis.; Weaver Tankage Corporation, Norfolk, Va.

Two other companies formerly making tankage have ceased operation in this field.

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Packed in Hammond Multi-Wall bags, your products are constantly protected against damage by water, sifting, absorption of atmospheric vapor, loss of essential moisture, etc., during storage or shipment. They are built to withstand abuse. • Hammond pasted or sewn bags are available in open mouth or valve styles to suit your needs.





SPENCER'S Nitrogen Sales Policy

LOOKS TO THE FUTURE

 **SPENCER CHEMICAL COMPANY**

Chemicals for Industry and Agriculture

To The Fertilizer Industry:

With the supply of nitrogen far short of the demand, the public is confronted with a situation whereby the seller could enjoy certain temporary advantages, if he elects to use them.

Because nitrogen supplies are not adequate for today's demand does not mean there will continue to be a shortage over the next two, three or four years. The production of new, modern, and economical fertilizer materials is scheduled to be increased rapidly during the next twelve months.

Plans are well advanced for the Army to produce in their own ordnance plants the nitrogen fertilizer required by them in their rehabilitation program abroad. This means practically all other domestic nitrogen production will be available for use in our own country within the next eight to twelve months.

The policy of Spencer Chemical Company is a long-range one, based on the good will of the customer. In order to have your good will, we realize we must conduct our business relations with the public during these days of critical shortages in such a way as to deserve it.

WE WILL SELL AND DISTRIBUTE ALL OUR NITROGEN FERTILIZER PRODUCTS THROUGH RECOGNIZED, ESTABLISHED FERTILIZER TRADE CHANNELS!

In brief, our relations with the trade will be governed by the knowledge that before long we will ask for your business under highly competitive conditions, which we shall welcome.

The mechanical condition and handling qualities of Spencer's new Ammonium Nitrate product will be unexcelled. A new day in fertilizer materials is dawning. We will keep you informed on developments.

Sincerely yours,

Jac E. Laupepper

Director of Sales
Fertilizer Division

SPENCER CHEMICAL COMPANY General and Sales Offices: Dwight Building, Kansas City 6, Missouri
Works: Pittsburg, Kansas

Lion Oil Company Appoints Eason

Norman H. Eason has been named assistant sales manager of the Chemical Division of Lion Oil Company, El Dorado, Arkansas. Mr. Eason, who is in charge of ammonium nitrate fertilizer sales, was formerly associated with a large group of Southern cooperatives with headquarters in Alabama, distributors during the war of all the ammonium nitrate fertilizer produced by TVA and the Ordnance ammonia plants of the nation. He did much



Norman H. Eason

work in educating the fertilizer industry to the advantages of granular ammonium nitrate plant foods and helped in development of the present seller's market for ammonium nitrate fertilizers. Mr. Eason will concentrate on serving the domestic fertilizer industry, it was announced by A. F. Reed, Vice President and Sales Manager.

Mr. Eason's twenty-three years of experience in the fertilizer field began immediately after his graduation from Cornell University, College of Agriculture, in 1923. Grass-roots contact with farmers while serving as a county agricultural agent and as territorial representative for fertilizer sales of the Grange-League Federation has given him a thorough understanding and appreciation of fertilizer problems.

THE RESPONSIBILITY OF THE FERTILIZER INDUSTRY

(Continued from page 9)

indications that in these regions the consumption of certain fertilizer ingredients may actually be reduced in the future as a result of very heavy applications, particularly of phosphatic fertilizers, over a long period of time. I am thinking particularly of the results of the study made by the United States Department of Agriculture in cooperation with the several state experiment stations, of the accumulated phosphate in the soils of the intensive potato growing areas along the eastern coast from Maine to Florida. There seems to be little question but that the amount of phosphate used in these areas can be appreciably reduced without detriment to either soil or potato crop.

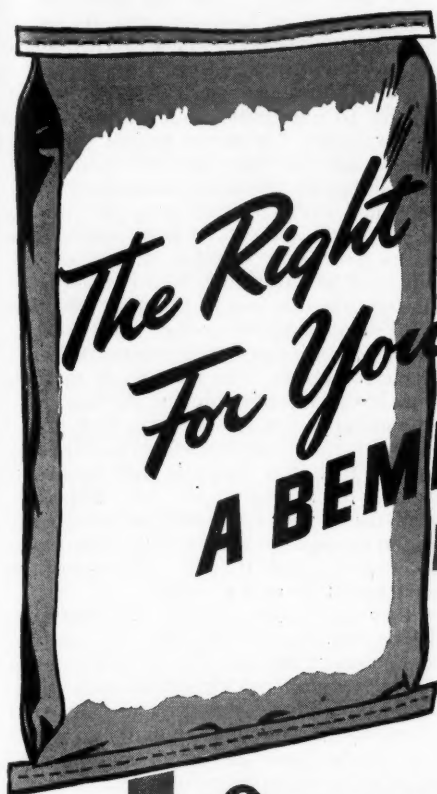
On the other hand, in the livestock section of the country, where a high percentage of the agricultural products grown are fed to livestock, where a crop rotation including the frequent cultivation of a perennial legume is involved, and where large quantities of manure are returned to the soil, the first element likely to be needed as a fertilizer is phosphoric acid. You will recall how the use of superphosphate has been the backbone of the fertilizer program of a good section of our Corn Belt and of many of the dairy sections of the country. After a quarter of a century of a superphosphate program, however, we are finding that the response to phosphate on farms that have been using the recommended quantities over this long period of time is not as marked as it used to be; and a response to potash fertilizers, especially on the legume crops, is being observed more and more frequently. It is true in my own state of New York and it is doubtless true of Wisconsin and other dairy states as well.

Fertilizer consumption has increased over 300 per cent in many of our western Corn Belt states during the war. This increase is bound to continue in the post-war period, in my judgment. There is also the likelihood of a considerable increase in fertilizer consumption in the irrigated section of the West. During the period in which fertilizer raw materials were scarce, there was a tendency, which is easy

Stedman	FERTILIZER PLANT EQUIPMENT			
	Dependable for Fifty Years	All-Steel Self-Contained Fertilizer Mixing Units	Batch Mixers— Dry Batching Pan Mixers— Wet Mixing	Swing Hammer and Cage Type Tallings Pulverizers
				Vibrating Screens Dust Weigh Hoppers Acid Weigh Scales

Founded 1834

STEDMAN'S FOUNDRY & MACHINE WORKS 505 Indiana Ave. AURORA, INDIANA, U.S.A.



The Right Container For Your Fertilizer A BEMIS MULTIWALL

Bemis Multiwall Paper Shipping Sacks give you an efficient, low-cost container for your fertilizer. Note these quality and service advantages:

- ① Six Bemis Multiwall Plants are located at strategic points north, south, east, and west to facilitate delivery.
- ② Materials for Bemis Multiwalls are carefully selected and laboratory tested before used in production. Sacks are rigidly inspected throughout all manufacturing processes.
- ③ Bemis Multiwall Specialists are at your service to help you solve packaging problems. Bemis representatives are located in 32 principal cities.

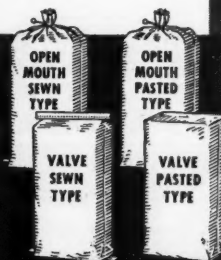
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to understand, for fertilizer manufacturers to use practically all the materials available to them in mixed fertilizers in certain sections of the country. This has resulted in considerable criticism of the industry. There are many places in our cropping system in which the single materials are needed. You are all familiar with the great demand for nitrogen for side dressing on many crops in the South. More nitrogen will be used as side and top dressings in other sections of the country, when it is available in large quantities and at reasonable prices. Recent experimental evidence indicates that there will also be a place for the use of muriate of potash as a top dressing or side dressing on certain crops in certain sections of the country. And there are still many places in which superphosphate alone should be used. I, personally, feel that the industry has an obligation to make these materials available where they are needed. It is not to the interest of the farmer nor to the long-time interest of the industry to force him to buy a mixed fertilizer under the circumstances. I appreciate that the "take" of the industry may be greater in the case of mixed fertilizers, but it is, in my judgment, to the long-time interest of the industry to make available to the farmer the fertilizer that will give him the best returns from his fertilizer investment. That will make him a better customer for the future.

3. To Make Them Available to Farmers at a Fair Price

The record of the fertilizer industry in supplying fertilizer to farmers during the war period at a reasonable price is well known. Few, if any, of the factors entering into the cost of production of farm products have increased as little as the cost of commercial fertilizers. This is doubtless one reason for the unprecedented demand for fertilizers during the war period. As a matter of fact, the record of the fertilizer industry in this respect

has been very fine over the last quarter of a century. There is, however, still room for further progress. During the war when labor and bags were scarce and our transportation system was bogging down, a desperate effort was made to eliminate all inert filler from mixed fertilizers. It seems to me that the progress made in this direction under the pressure of the war must be maintained and I believe that even further progress can be made. In my judgment, *all inert materials in fertilizers must go!* Careful studies of the economics of fertilizer manufacture and distribution indicate that one of the most effective ways for decreasing the cost of plant food to the farmer is to increase the concentration of his mixed fertilizers. We have made marked progress in this direction during the war. We were handicapped at times by the lack of the more concentrated carriers, but in spite of this progress I feel that there is still room for additional improvement in this direction. Some of the farmer cooperatives are already setting an example of what can be done along this line—an example that I feel the rest of the industry might do well to follow.

Another step taken during the war that should be continued in the post-war years is the reduction of the number of mixed fertilizers which are offered for sale in the various states. I have been pleased by the fact that both farmers and fertilizer manufacturers, as well as agronomists, are recommending that every state take appropriate action to keep the number of fertilizers offered for sale in that state down to the reasonable number necessary to meet the requirements of the soils and crops in that state. Many states have already passed legislation to this end. Other states have such legislation under consideration. It would be a terrible mistake to return to the illogical situation which we had in many of our states before the war.

There are a number of other ways in which the farmer can obtain greater returns from his



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"It's a Dolomite"

American Limestone Company

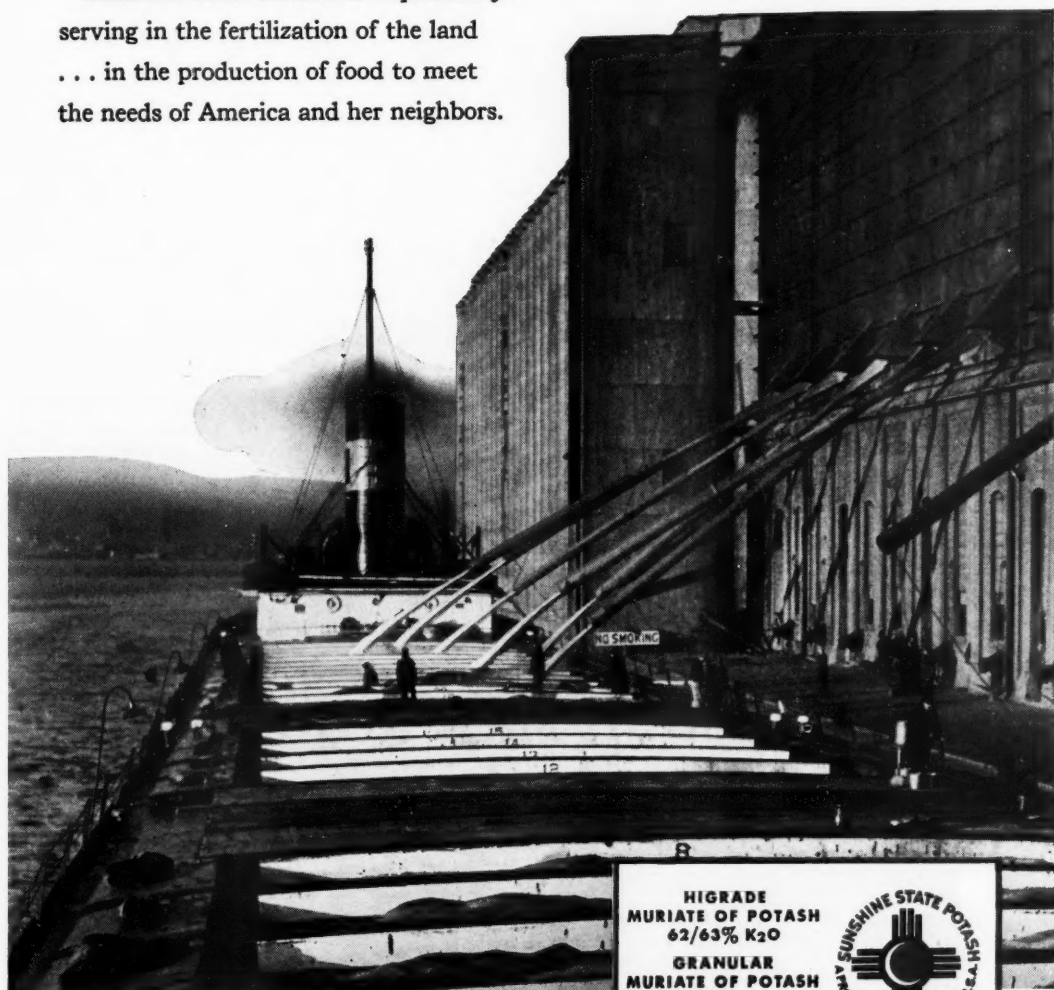
Knoxville, Tenn.

HORN OF PLENTY...

Here it is . . . Golden Wheat . . . near the end of the line in the production of grain to feed the world. But the first step was the making of an enriched, fertile soil.

Your fertilizers, many of them compounded with potash, are vitally needed in this first step . . . the enrichment of the land. For potash increases soil fertility . . . strengthens resistance to disease and drought.

Sunshine State Potash is importantly serving in the fertilization of the land . . . in the production of food to meet the needs of America and her neighbors.



UNITED STATES POTASH COMPANY

Incorporated

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HIGRADE
MURIATE OF POTASH
62/63% K_2O

GRANULAR
MURIATE OF POTASH
48/52% K_2O

MANURE SALTS
22/26% K_2O



Reg. U. S. Pat. Off.

fertilizer investment. We can greatly improve the adjustment between crop needs and the fertilizer supplied. The methods used to date have been rather crude but, as more information becomes available, we shall learn to do a better job of adjusting our fertilizer practice to the needs of our various soils and crops. The fertilizer industry should continue to lend its support to every effort being made in this direction. It is to the farmers' interests and hence to the long-time interests of the fertilizer industry.

The cost of bagging fertilizer is a rather important item. Are there sections of the country and conditions under which bulk distribution of fertilizer with a spreading service similar to that used for limestone might be a feasible development? Experiments are already being conducted along that line with considerable promise of success. There is also evidence that the time of application of certain fertilizers can be spread over a longer period than we formerly thought. If we can lengthen the period of fertilizer distribution, it could result in economies to all concerned.

4. To Assume Its Due Share of Responsibility for the Efficient use and Conservation of Our Fertilizer Resources

In the past 15 years, this country has been awakened as never before to the importance of conserving our soil resources. The importance of fertilizers in this field of soil conservation is recognized by all who have given the matter careful consideration. It seems to me, however, that there is one phase of the conservation problem which has not received as much attention as it should. It seems to me that the conservation and wise use of our fertilizer resources are even more important to the future welfare of the nation than the conservation of the soil—more important because there can be no adequate soil conservation without the wise use of fertilizers.

While our fertilizer resources in this country are very large, they are not inexhaustible. For that reason, we should not exploit the cream of these deposits and despoil the skim milk. We need to utilize them as efficiently as economic conditions, backed by a sound program of scientific research, can possibly justify. If this is not done, there will be a constant threat of government ownership and control of all fertilizer reserves. This will call for the maintenance within the fertilizer industry, from the top down, of a true conception of the social responsibility of the industry. No enlightened nation can afford to allow any group free license with a resource as vital to the future of its people as fertilizer materials, for an indefinite period.

To fulfill the responsibilities which I have enumerated will call for sound planning based on sound research. It will call for close cooperation between the industry, the scientists concerned with fertilizer in the United States Department of Agriculture, and in the various state agricultural colleges and experiment stations. These groups have worked together closely in the past. With wise leadership at the helm, the industry should be able to avoid the shoals and obtain the goals I have pointed out with profit to itself, to the farmer, to the country, and to the world.

CLASSIFIED ADVERTISEMENTS

Advertisements for sale of plants, machinery, etc., and for help and employment in this column, same type as now used, 60 cents per line, each insertion.

WANTED to purchase—outright or controlling interest in going fertilizer business. Address "205" care THE AMERICAN FERTILIZER, Philadelphia 3, Pa.

WANTED—Two used Jeffrey, type G fertilizer diggers and loaders complete with motors. Address Johnson Cotton Company, Box 680, Dunn, N. C.

Cable Address: CABESCAR

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Domestic—Foreign


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Brokers **Fertilizer**
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Bags

SOUTH AMERICAN DRY

RENDERED TANKAGE

PEOPLES OFFICE BUILDING

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... WHEN BORON IS NEEDED TO CORRECT A DEFICIENCY OF THIS IMPORTANT SECONDARY ELEMENT

Agricultural authorities have shown that a lack of Boron in the soil can result in deficiency diseases which seriously impair the yield and quality of crops.

When Boron deficiencies are found, follow the recommendations of local County Agents or State Experiment Stations.

Information and references available on request.

AMERICAN POTASH & CHEMICAL CORPORATION

122 East 42nd ST., NEW YORK CITY

Pioneer Producers of Muriate of Potash in America

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AMMONIA—Anhydrous and Liquor

DuPont de Nemours & Co., E. I., Wilmington, Del.
Hydrocarbon Products Co., New York City.
Spencer Chemical Co., Kansas City, Mo.

AMMONIUM NITRATE

Spencer Chemical Co., Kansas City, Mo.

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BAG PRINTING MACHINES

Schmuts Mfg. Co., Louisville, Ky.

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Armour Fertilizer Works, Atlanta, Ga.
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Schmalts, Jos. H., Chicago, Ill.

BORAX AND BORIC ACID

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BROKERS

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Bradley & Baker, New York City.
Huber & Company, New York City.
Keim, Samuel D., Philadelphia, Pa.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., New York City.
Schmalts, Jos. H., Chicago, Ill.

BUCKETS—For Hoists, Cranes, etc.

Hayward Company, The, New York City.

BUCKETS—Elevator

Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

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Hough Co., The Frank G., Libertyville, Ill.
Sackett & Sons Co., The A. J., Baltimore, Md.
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CHEMICALS

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Keim, Samuel D., Philadelphia, Pa.

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Huber & Company, New York City.
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Scar-Lipman & Co., Inc., New York City.
Schmalts, Jos. H., Chicago, Ill.

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Davison Chemical Corporation, Baltimore, Md.
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Utility Works, The, East Point, Ga.

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Scar-Lipman & Co., Inc., New York City.

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Tennessee Corporation, Atlanta, Ga.

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Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Ruhm, H. D., Mount Pleasant, Tenn.
Scar-Lipman & Co., Inc., New York City.
Schmalts, Jos. H., Chicago, Ill.
Virginia-Carolina Chemical Corp., Richmond, Va.

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Potash Co. of America, New York City.
International Minerals & Chemical Corp., Chicago, Ill.
United States Potash Co., New York City.

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Schmutz Mfg. Co., Louisville, Ky.

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Schmaltz, Jos. H., Chicago, Ill.

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Scar-Lipman & Co., Inc., New York City.
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Virginia-Carolina Chemical Corp., Richmond, Va.

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TANKAGE

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Scar-Lipman & Co., Inc., New York City.
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DuPont de Nemours & Co., E. I., Wilmington, Del.

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(SINCE 1898)

SAMUEL D. KEIM
1343 ARCH STREET
PHILADELPHIA 7, PA.

MONARCH SPRAYS



This is our Fig. 645 Nozzle. Used for Scrubbing Acid Phosphate Gases. Made for "full" or "hollow" cone in Brass and "Everdur." We also make "Non-Clog" Nozzles in Brass and Steel, and Stoneware Chamber Sprays now used by nearly all chamber spray sulphuric acid plants.

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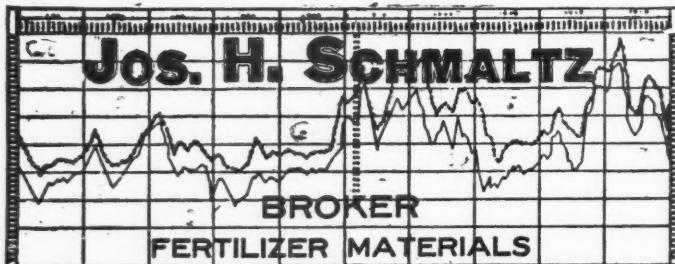
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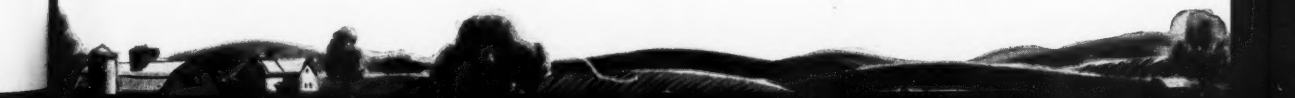


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